ABSTRACT

A protocol for self-addressing control units is effected by arranging a plurality of control units in a sequence and running a line from a master controller with links off the line to each control unit. A feedback line is provided in the reverse direction for each control unit to communicate backwards. The master controller sends out a signal to identify itself and the control units down the line address and identify themselves by adding a 1 to the number that each control unit receives from the previous control unit. Accordingly, the first control unit addresses itself as 1, the second control unit addresses itself as 2, etc. This protocol has applicability to modular signs as well as other fields of application of wherein a number of control units are linked together such as a computer networking, prosthetics, etc.

When used in connection with a modular sign, the protocol of the present invention can be used to coordinate displaying a message by allowing each of a plurality of control units to display a desired character to form a message on an array of control units. This sign can be remotely controlled by a pager system. Each control unit includes a box housing a Mylar scroll operated by a motor and an optical sensor to read markings on the Mylar scroll to position appropriate characters in response to a signal to display a character to form a part of a message on the modular sign. The box includes an open face with a frame there around which is a black opaque color. A transparent cover sits thereover to seal up the control unit. The control units can be removed and serviced and/or replaced by means of extraction tools. The control units are mounted against a wall or within on an enclosure by connecting brackets including a plurality of contacts formed within receptacles positioned along the brackets to receive spades extending from the back of the control units. Accordingly, the

mounting brackets provide electrical contacts as well as attachment for the control units. The control units include circuit boards in contact with the spades and a reverse bus is formed on the circuit board to run power and data along the system.